

AMENDMENTS TO THE CLAIMS

Claims 1-27 are cancelled.

28. (previously presented) An apparatus for recording environmental data measurements, comprising:

- a sensor for detecting environmental data;
- a controller for controlling the operation of the sensor, the operation of the sensor including a plurality of operation modes automatically selected by the controller, wherein the controller further comprises:
 - a front-end circuit coupled to the sensor;
 - a loop filter coupled to the front-end circuit;
 - a multiphase clock generator coupled to the front end circuit and the loop filter;
 - a startup sequencer coupled to the loop filter and the multiphase clock generator;
 - a sensor simulator for simulating the performance of the sensor coupled to the startup sequencer, the multiphase clock generator, and the front-end circuit; and
 - an overload detection device coupled to the loop filter and the startup sequencer.

Claims 29-34 are cancelled.

35. (currently amended) The apparatus of claim 28, wherein the startup sequencer is used at least in part to select ~~a~~ the mode of operation of ~~a~~ the feedback control system providing control to the apparatus.

Claims 36-48 are cancelled.

49. (previously presented) The apparatus of claim 28, wherein the multiphase clock generator includes a digital signal generator; and a data-independent clock resynchronization circuit coupled to the digital signal generator for resampling clock signals.

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50. (currently amended) The apparatus of claim 28, wherein the sensor simulator includes a sensor simulator filter adapted to receive one or more input signals and generate an output signal representative of ~~an~~ the operating state of the sensor; and an input signal selector operably coupled to the sensor simulator filter adapted to controllably select the one or more input signals as a function of ~~a~~ the simulated operating state of the sensor.

51. (previously presented) A method for recording environmental data measurements, comprising:

detecting environmental data using a sensor;

controlling the operation of the sensor by automatically selecting one or more of a plurality of operation modes using a controller, wherein the controller includes a front-end circuit coupled to the sensor, a loop filter coupled to the front-end circuit, a multiphase clock generator coupled to the front end circuit and the loop filter, a startup sequencer coupled to the loop filter and the multiphase clock generator, an overload detection device coupled to the loop filter and the startup sequencer; and

simulating the performance of the sensor using a sensor simulator coupled to the startup sequencer, the multiphase clock generator, and the front-end circuit.

52. (currently amended) The method of claim 51 further including selecting ~~a~~ the mode of operation of ~~a~~ the feedback control system for recording environmental data measurements using in part the startup sequencer.

53. (previously presented) The method of claim 51, wherein the multiphase clock generator includes a digital signal generator; and a data-independent clock resynchronization circuit coupled to the digital signal generator, the method further including resampling clock signals using the multiphase clock generator.

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54. (currently amended) The method of claim 51, wherein the sensor simulator includes a sensor simulator filter and an input signal selector operably coupled to the sensor simulator filter, the method including receiving one or more input signals and generating an output signal representative of an ~~the~~ operating state of the sensor using the sensor simulator filter and controllably selecting the one or more input signals as a function of a ~~the~~ simulated operating state of the sensor using the input signal selector.